

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Daniel R. Swanson Sr.

Filing Date: February 6, 2004

Title: *System and Method of Using RFID Devices to Analyze Customer Traffic Patterns in Order to Improve a Merchant's Layout*

**Commissioner For Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**

Dear Sir:

CERTIFICATE OF MAILING  
BY EXPRESS MAIL

I hereby certify that this communication is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" under 37 C.F.R. § 1.10 on the date indicated below and is addressed to Commissioner For Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Willie Jiles

Willie Jiles

Date: February 6, 2004

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**Petition to Make Special Under 37 C.F.R. § 1.102(d)**

Applicant submits this Petition under 37 C.F.R. § 1.102(d) to make this Application special.

**Pre-Examination Searches**

The professional search firm Intellectual Property Concerns, Inc., has made a pre-examination search. The search included Class 340, Subclasses 568.5, 568.7, 573.1, 686.1, and 825.49; Class 235, Subclasses 375 and 383; and Class 705, Subclasses 10 and 21. Foreign patents and literature were also searched. In addition, USPTO Examiner Trieu from Art Unit 2632 was consulted during the search.

The search uncovered the following references:

1. U.S. Patent No. 5,541,835  
Inventors: Marcel Dextraze and Miguel A. Marin  
Title: *Monitoring and Forecasting Customer Traffic*
2. U.S. Patent No. 6,236,335  
Inventors: John C. Goodwin, III  
Title: *System and Method of Tracking Short Range Transmitters*
3. U.S. Patent No. 6,424,264  
Inventors: Patrick W. Giraldin et al.  
Title: *System for Real-Time Location of People in a Fixed Environment*
4. U.S. Patent No. 6,536,658  
Inventors: Edward G. Rantze  
Title: *Method and Apparatus for Operating Retail Terminal Having a Proximity Detector that is Operable to Ascertain Movement and Distance of a Consumer Relative to the Retail Terminal*
5. U.S. Patent Publication No. US 2002/0080198  
Inventors: Patrick W. Giraldin et al.  
Title: *System and Methods for Tracking Consumers in a Store Environment*
6. U.S. Patent Publication No. US 2002/0161651  
Inventors: Ronald Gary Godsey et al.  
Title: *System and Methods for Tracking Consumers in a Store Environment*
7. U.S. Patent Publication No. US 2002/0165758  
Inventors: John R. Hind et al.  
Title: *Identification and Tracking of Persons Using RFID-Tagged Items*
8. U.S. Patent Publication No. US 2003/0009364  
Inventors: Masanori Miyoshi et al.  
Title: *Facility Management System Based on Flow-Line Information*
9. Article from The Regulators  
*URL: http://search.washingtonpost.com/wp-srv/WPlate/1999-11/19/0711-111999-idx.html*  
Title: *System's Trademark: Have a Slow Day*  
By: Cindy Skrzycki

In addition, an in-house keyword search was performed using an Internet search engine. The search uncovered the following references:

1. U.S. Patent No. 5,729,697  
Inventors: Mario Schkolnick et al.  
Title: *Intelligent Shopping Cart*
2. U.S. Patent No. 6,032,127  
Inventor: Mario Schkolnick et al.  
Title: *Intelligent Shopping Cart*
3. Article from Integrated Solutions  
*URL: http://www.integratedsolutionsmag.com/articles/2001\_11/011110.htm*  
Title: *Whose Afraid of RFID?*  
By: Tom von Gundten
4. Article from CRM News  
*URL: http://www.crmdaily.com/perl/story/14773.html*  
Title: *TI Smart Tags Help Gap Customers Find Their Jeans*  
By: Dan McDonough, Jr.
5. Article from Privacy & Data Protection  
Title: *Data Protection and RFID Systems*  
By: Eduardo Ustaran
6. Article from C.A.S.P.I.A.N.  
*URL: http://www.nocards.org/*  
Title: *Is Big Brother in your Grocery Cart?*  
By: Katherine Albrecht
7. Article from C.A.S.P.I.A.N.  
*URL: http://www.nocards.org/news/index.shtml*  
Title: *Food Industry News*  
By: Katherine Albrecht
8. Article from C.A.S.P.I.A.N.  
*URL: http://www.nocards.org/AutoID/overview.shtml*  
Title: *Food for Thought, Auto-ID: Tracking everything, everywhere*  
By: Katherine Albrecht
9. Article from CNET News.com  
*URL: http://news.zdnet.co.uk/business/0,39020645,2134438,00.htm*  
Title: *Tags Track Japanese Shoppers*  
By: Winston Chai

10. Article from Geek.com  
*URL: <http://www.geek.com/news/geeknews/2003May/gee20030509019926.htm>*  
Title: *RFID tracking makes it into Japanese stores*  
By: Matthew
11. Article from Massachusetts Institute of Technology  
*URL: [http://www.autoidcenter.org/media/fmi\\_2002.pdf](http://www.autoidcenter.org/media/fmi_2002.pdf)*  
Title: *The Next Information Revolution: The Networked Physical World*  
By: Dr. Daniel W. Engels
12. Article from OutofRange.net  
*URL: <http://www.outofrange.net/blogarchive/archives/000291.html>*  
Title: *What's in a Loyalty Card?*  
By: Simon

#### **Detailed Discussion of the References**

U.S. Patent Application Publication No. U.S. 2002/0165758 discloses a method and system for identifying and tracking persons using RFID-tagged items carried on the persons. Previous purchase records for each person who shops at a retail store are collected by POS terminals and stored in a transaction database. When a person carrying or wearing items having RFID tags enters the store or other designated area, a RFID tag scanner located therein scans the RFID tags on that person and reads the RFID tag information. The RFID tag information collected from the person is correlated with transaction records stored in the transaction database according to known correlation algorithms. Based on the results of the correlation, the exact identity of the person or certain characteristics about the person can be determined. This information is used to monitor the movement of the person through the store or other areas. The tracking information can be used to provide targeted advertising to the person as the person roams through the store, or to analyze and improve existing store systems, such as the physical layout of the store, advertisement displays in the store, customer service systems in the store, lighting and other environmental settings in the store system, etc.

U.S. Patent No. 6,236,335 discloses a system and method of locating a wireless device in a transaction establishment which relies on signal strength measurements and the known positions of receiving antennae. The system includes a number of transceivers each

including a transmitter which transmits a first signal to the wireless device, a plurality of receivers including a plurality of antennae located throughout the transaction establishment and at least one signal strength determining circuit for determining signal strengths of second signals received by the antennae, and a control circuit for controlling transmission of the first signal and reception of the second signals. A storage medium contains the locations for each of the antennae. A computer coupled to the control circuit instructs the control circuit to transmit the first signal and determines a location of the wireless device in the transaction establishment from the signal strengths and from the locations of the antennae. Multiple locations of a wireless device may be tracked and analyzed to yield customer shopping patterns. The system and method disclosed may be used to track customer shopping patterns for those customers that are using wireless communication devices. The data from customer tracking may be used to rearrange items within the transaction establishment.

U.S. Patent Application Publication No. U.S. 2002/0161651 discloses a system for tracking a plurality of product containers in a store environment and generating a track through the store environment representative of a continuous path followed by each of the product containers to a point-of-sale location. The system includes the plurality of product containers and a plurality of identification tags each of which is associated with and uniquely identifies one of the product containers. A plurality of sensors is provided in the store environment each of which has a region associated therewith within which the identification tags are detected. At least one of the plurality of sensors has within its associated region the point-of-sale location. A processor is configured to receive location data from the plurality of sensors and generate the track therefrom. Empirical tools are provided which enable detailed analysis and understanding of how various stimuli affect consumer behavior in a store environment. According to one embodiment, actual tracking of consumers in the store environment is effected, thus generating much more substantial information than simply tracking purchases or using qualitative interview techniques. According to various embodiments, this quantitative information may then be complemented with qualitative information, e.g., consumer interviews, with the end objective being improved utilization of store floor space. That is, this information maybe used to effectively direct consumers to

higher profit margin items, to understand how demos, end caps, and in-store multimedia presentations affect consumers.

U.S. Patent No. 6,536,658 discloses a method and apparatus for operating a retail terminal, such as a kiosk, includes a proximity detector that is operable to ascertain movement of a consumer relative to the retail terminal and the distance therefrom. The retail terminal may use the movement/distance measurement to either power-up the retail terminal from a power-down mode or change the mode of operation of the retail terminal. A transmitter emits waveforms of preferably different frequencies that reflect from objects (e.g. a consumer) within various zones. The reflected waveforms are received by a detector in the retail terminal and analyzed to determine movement and/or distance that the consumer is relative to the retail terminal. A retail terminal is also provided. The retail terminal collects data, which may include (i) customer traffic patterns associated with customer movement within the retailer's store, and (ii) survey information associated with a customer's perception of the retailer's operation. Hence, some examples of data collection functions include (i) counting the number of customer's which shop in a particular aisle or within a particular area of the retailer's store, (ii) displaying a retail survey question, and (iii) entering a response to a displayed retail survey question into a memory of the retail terminal with a touch screen device.

U.S. Patent Application Publication No. U.S. 2002/0009364 discloses that there has been a problem in that it is impossible to change the layout of the facility at an appropriate timing. To solve this problem, the appropriateness a facility is judged based on a movement cost calculated using an automatically measured flow line of a moving body. In order to attain such a result, flow line-measuring is carried out for measuring the flow line of a moving body by detecting the moving body as an object to be monitored; movement cost-calculating is carried out for calculating a cost expended on movement of the moving body derived from low line information; and movement cost-evaluating is carried out for judging whether or not a cost calculated by the movement cost-calculating process is within a permissible range.

An object of the invention is to provide a facility monitoring system which monitors identified persons, that is, identified persons having a strong connection with a facility having objects to be monitored, such as the employees or the residents of the facility, and which can provide very useful movement cost information. Another object of the invention is to provide a facility monitoring system having a movement cost monitoring function which monitors a condition of appropriateness of the layout at present through collection of flow line information of identified persons having a strong connection with a facility, and which can recommend to a user the need for a change in the layout at an appropriate timing.

U.S. Patent No. 6,424,264 discloses a system for tracking in real-time the location of a group of individuals within a defined environment, for providing information to an individual user about the location of any other individuals of the group and for gaining assistance to locate and reunite lost individuals. The system uses an identification Tag with serial identification Tag number worn by each individual of the group, has means for communicating with each Tag as it moves with the individual through the environment and means for using the communication to determine the position of the Tag in the environment. The system also uses strategically placed ID stations distributed within the environment for users to activate a request that the system locate members and for displaying a map indicating the location of members of the group.

U.S. Patent Application Publication No. U.S. 2002/0080198 discloses a system for tracking in real-time the location of a group of individuals within a defined environment, for providing information to an individual user about the location of any other individuals of the group and for gaining assistance to locate and reunite lost individuals. The system uses an identification tag with a serial number worn by each individual of the group, has means for communicating with each tag as it moves with the individual through the environment and means for using the communication to determine the position of the tag in the environment. The system also uses strategically placed identification stations distributed within the environment for users to activate a request that the system locate members and for displaying a map indicating the location of members of the group.

U.S. Patent No. 5,541,835 discloses a system for monitoring and forecasting customer traffic and customer servicing at a location wherein each customer may be served at any one of a plurality of available service stations. A detector at the entrance of a defined area detects passage of a customer at the entrance. At each service station, a sensor detects the presence of a customer proximate to the station. A data processor is used for registering the time of the day when the passage is detected, the time of the day when a change of state occurs at each station. The times and the type of event registered are then computed by a method, known as the discrete event modeling and simulation, to establish customer traffic monitoring and forecasting.

U.S. Patent No. 6,507,279 discloses an integrated self-checkout system and method incorporating access control, electronic article surveillance (EAS), and radio frequency identification (RFID) subsystems, and allows marketing advertisements and pricing to be directed to a specific individual. The customer uses either a cell phone or an interactive personal digital assistant (PDA) when in the store, which displays prices and/or advertisements. The prices and advertisements are selected according to the customer's buying habits. The customer's buying habits are obtained by tracking the customer in the store and recording selected parameters such as the customer's track through the store, the time spent in various locations in the store, items selected by the customer, and items purchased. A database of customer habits is input to a decision program that determines the content of advertisements, and the pricing of various items. In addition to the customer's cell phone or PDA, the advertising and pricing can be communicated to the customer through shelf price displays and fixed displays strategically positioned in the store. RFID or bar code scanners are used to identify the items selected by the customer, and EAS functions can be deactivated for the specific items purchased. The customer's current location and buying habit parameters are obtained. The customer's buying habits and present location are used to determine appropriate prices and advertisements for items in the vicinity of the customer for display on the shelf displays, fixed displays, and the customer's cell phone or PDA.

U.S. Patent Nos. 6,032,127 and 5,729,697 disclose a mobile shopping cart that can automatically keep track of objects selected and carried in the cart and provide a customer

using the cart information like the total price of the items carried. The cart has a radio frequency cart base station with a cart antenna connected to a radio frequency cart transceiver. Various novel embodiments of the invention produce a radio frequency field within the shopping cart that is used to communicate with radio frequency tags on objects carried in the cart. The tags contain information about the respective carried object to which the tags are attached. A program function executed by the cart circuit and/or computer controls the cart transceiver to interrogate radio frequency tags within the radio frequency field, i.e. inside the cart to gain information about the carried objects. Tags on objects external to the cart are not interrogated. The customer may track a running total of the price of objects carried in the cart (or other information about the object) while accounting for objects that are added or removed from the cart. In addition, the customer can pay for the objects carried on the cart in one embodiment with a payment apparatus on the cart. This allows for elimination of the check out stations in the store. A security station used to prevent theft of objects is also described. Communication links between a store computer and the cart can be used to communicate (object locations, store maps, objects on sale, etc.) with the customers while they are selecting objects and to facilitate store inventory.

“Who’s Afraid of RFID” article discloses using RFID for inventory management by embedding an RFID tag in the retail tag for each item. The system helps the retailer to track items from the distribution center (DC), through the store’s back room, to the shelves, and, ultimately, out the door. The RFID system informs the staff when shelves are low on particular items. In addition, the RFID system enables staff to take inventory on entire sections of the store or back room in a few minutes. The use of RFID to speed inventory monitoring in retail is merely a variation on its use for basic supply chain and warehouse operations. Advances in UHF (ultra high frequency) technology should make RFID-enabled supply chain management accessible to more customers.

“TI Smart Tags Help Gap Customers Find Their Jeans” article discloses a system used by The Gap to keep track of its vast supply of jeans. The Gap has conducted a field test of Texas Instruments’ Tag-it smart label system at its Atlanta, Georgia, operations. Texas Instruments said the system improved customer service by locating items of clothing as they

traveled from the factory to the retail store. Say a Gap customer has trouble finding a certain size, style and color. With the new system in place, a salesperson no longer has to retrace the customer's steps, rummaging through items that may or may not be properly shelved. Instead, the clerk can simply zero in on the exact item requested by using the nifty RFID system.

"Data Protection and RFID Systems" article discloses that RFID systems allow the exchange of data between small transponders (known as tags) and a reader device. RFID tags are used to provide remote identification of items and reveal their location. The applications of RFID systems include many diverse operations such as product tracking, electronic surveillance, access controls and animal tagging.

"C.A.S.P.I.A.N.: Is Big Brother in *your* grocery cart?" web page discloses that RFID chips, tiny tracking devices the size of a grain of dust, can be used to secretly identify you and the things you're carrying--right through your clothes, wallet, backpack, or purse. The web page also includes links to various articles regarding RFID technology in supermarkets.

"C.A.S.P.I.A.N.: Food Industry News" web page includes summaries of and links to various articles regarding the use of RFID technology in supermarkets and otherwise. These articles disclose RFID tags being implanted into products, store shelves, cars, shopper loyalty cards, key fobs, and shipping crates and pallets for inventory management and customer tracking purposes.

"C.A.S.P.I.A.N.: Auto-ID: Tracking Everything, Everywhere" article discloses a prediction of a pervasive global network of millions of receivers along the entire supply chain -- in airports, seaports, highways, distribution centers, warehouses, retail stores, and in the home, which would allow for seamless, continuous identification and tracking of physical items as they move from one place to another, enabling companies to determine the whereabouts of all their products at all times. The European Central Bank is quietly working to embed RFID tags in the fibers of Euro banknotes by 2005. The tag would allow money to carry its own history by recording information about where it has been, thus giving governments and law enforcement agencies a means to literally "follow the money" in every

transaction. RFID applications could include shopping carts that automatically bill consumers' accounts (cards would no longer be needed to link purchases to individuals), refrigerators that report their contents to the supermarket for re-ordering, and interactive televisions that select commercials based on the contents of a home's refrigerator. Marketers are now planning ways to use RFID technology to monitor consumers' use of products within their very homes, using RFID tags coupled with indoor receivers installed in shelves, floors, and doorways.

"Tags Track Japanese Shoppers" article discloses using RFID tags to determine how long a customer spends wandering round a shop or browsing through a book. For example, a Japanese company is placing tag readers on the shelves of bookstores to allows booksellers to gain information such as the range of books a shopper has browsed, how many times a particular title was picked up and even the length of time spent flipping through each book. The ability to track a consumer's in-store behavior holds immense business potential for store owners, as it allows them to do things like charging higher premiums for high-traffic locations or tweaking product placement to spur movement of less-popular products.

"RFID Tracking Makes it into Japanese Stores" article discloses that Japanese shoppers are soon to be under the close scrutiny of radio frequency identity (RFID) tracking systems when they enter certain shops. Shops will be able to place trackers around their stores to allow them to garner information about what customers do within the shop. Information such as exactly where the customers have walked, what they have picked up, and the amount of time spent at locations can all be recorded. From this information shop owners will be able to see where the high traffic areas are, what products attract the most attention, and generally how they can improve the layout of the store. It may also allow them to charge more for certain items placed in high-traffic areas, and move more unpopular stock by product replacement.

"The Next Information Revolution: The Networked Physical World" presentation discloses using RFID technology for various applications, including (1) Security and access control [control access to restricted areas, vehicle immobilization systems, theft

prediction/detection]; (2) Supply chain applications [asset tracking, reduce out of stocks, reduce inventory, reduce bull-whip effect, speed up delivery, check freshness, track and trace, produce to demand, identify sources of diversion, identify counterfeiting, theft prediction, faster recalls]; (3) Consumer applications [direct order from home, smart appliances, (e.g. microwave, washing machine, refrigerator), smart healthcare, assisted living]; and (4) New and less expected applications [customized products, smart recycling, checkout-less stores].

“OutofRange.net: What’s in a Loyalty Card?” article discloses that RFID is a tracking system that uses a chip around the size of a speck of dust joined to an antenna. The chip is embedded into a product and can then talk to a hand-held scanning device, currently at a range of 1-20 feet. The conversation between chip and scanner reveals the item’s “electronic product code”, similar to a barcode, except that in this case the information is unique to the item. The article further discloses current trials of RFID tags in Gillette Mach3 razorblades for theft prevention.

#### **Applicant’s Claims are Patentable Over the References**

Applicant’s claims recite limitations that are not disclosed, taught, or suggested in the above references, whether the references are considered individually or in any combination. As an example, none of the references discloses, teaches or suggests “providing a first customer a first card having an enabled RFID device coupled to the first card; obtaining demographic data regarding the first customer; determining the traffic pattern of the first customer[;] analyzing the demographic data and the traffic pattern of the first customer; [and] determining a modification to be made to the merchant layout based at least on the analysis of the demographic data and the traffic pattern of the first customer.” As another example, none of the references discloses, teaches, or suggests “allowing the first customer to select the first card having an enabled RFID device or a second card not having an enabled RFID device; and offering the first customer a financial incentive to select the first card rather than the second card.” As yet another example, none of the references discloses, teaches, or suggests “providing a first customer a first card having an enabled RFID device coupled to the first card . . . wherein the first card is a credit card.” Accordingly, for at least these reasons, Applicant’s claims are patentable over the references discussed above.

**Conclusion**

Under 37 C.F.R. § 1.102(d), Applicant respectfully requests that this Application be granted special status. Enclosed is a check in the amount of \$130.00 for this Petition. The Commissioner is hereby authorized to charge any fee and credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTT S L.L.P.  
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